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YOUNG & THOMPSON
209 Madison Street
Suite 500
ALEXANDRIA, VA 22314

EXAMINER
PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/809,501	OKI ET AL.	
	Examiner	Art Unit	
	MARIANNE L. PADGETT	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20 and 42-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20, 42-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Applicants' amendments to the claims on 12/11/2007 have removed most 112 rejections & objections to the claims as set forth in sections 2 & 3 in the action mailed 9/11/2007, however have introduced new problems, as well as significantly broadening the scope of the claims, such that only configuration that no longer requires an inclination almost or approaching vertical, & no particular effects are required to be caused by the configuration with respect to the drying process.

2. Claims 1-20 & 42-46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1-20 & 42-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While the amendment to the claims that require the inclination of the web to be 60°-90° with respect to the horizontal immediately after coating, can be considered to be generally supported by the discussion on page 12, which is describing the configuration of fig. 1, thus essentially also that of figs. 2A-B & 5, as this page appears to indicate that any angled less than 60° has a problem keeping the concentration of solvent vapor high close to the coating layer, however no support was found herein for the claim of "inclining with... guide rollers the upward transporting of said web from said 60°-90° inclination towards a horizontal direction **gradually**" (emphasis added), since the abrupt change illustrated with the figures (appears to be essentially about a 60° change or greater) in association with the 60°-90° teachings, would not be said by any reasonable person to be gradual, thus the claims as amended appear to encompass **New Matter**, i.e. to be inconsistent with pot configurations, however as applicants appear to be considering gradual given the context of their amended claims & teaching, virtually any change will be considered gradual with respect to applicants' claims (i.e. in view of applicants'

amendments, including do claim 45, all angles from 1°-90° appear to be considered gradual), hence "gradually" might be considered in view of applicants amendments to be an unclear relative term, that lacks clear at metes and bounds and when.

It is further noted, with respect new claims 44-46, that the relationship of the three angles as set forth in claims 45 & 46, are not disclosed on page 12 as separate limitations, but as a set of limitations which modify each other, hence for the teachings of 60°-90° (for claim 1 as written, $\Theta 1 = 60°\text{-}90°$), with three designated angular increments, it is not permissible for $\Theta 3 = \Theta 1$, or for $\Theta 3 < 60°$, which are included by these claims, hence the claims as written encompass **New Matter**. It is further noted that for $\Theta 1 = 60°$, $\Theta 2 = 60°$ must be the employed value, thus represents no change in inclination, hence does not contribute to any gradual inclining towards the horizontal. Further note that there does not appear to be any disclosure for what would reasonably be called a gradual change in inclination from the disclosed 60°-90°, that takes place outside applicant's initial drying chamber (i.e. while the third roller (17) after roller (13) at the coating position is outside the casing of the drying device, the inclination is achieved within the casing & the change to horizontal at roller 17 is not what most people would reasonably consider "gradual", but at least an abrupt 60° change).

3. Claims 3, 10, 12-13, 17 & 44-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3 it is unclear when the coating surface is required to peace positioned "upside". For purposes of examination, as long as the coating surface is positioned on the upper surface of a coating web sometime during the coating & drying process, this claim will be considered covered.

The amendments in claims 10 & 12-13 to exchange "plate-shaped member" for the previously employed "plate-like member" is a semantics change, which does not clarify the uncertainty as previously set for, i.e. how is the member shaped like a plate, but not necessarily a plate, or in other words is it or is it not a plate?

Claim 17, which is still stating "there is a heating device in a side of a non-coating surface of a transport position of said web with instead drying device", continues to make no logical sense, for reasons as stated on page 5 of the action mailed 9/11/2007. To paraphrase, it is unclear what is meant by "a non-coating surface... of said web", since at no point has the web itself ever been capable of creating a coating. Furthermore, for the heating device to be "in a side of... said web" means that the heating device is part of the web & must move with it, thus this claim continues to make no sense, although the examiner suspects it is due to inappropriate endings on words & misused prepositions, i.e. translation errors.

In that the claim 1, applicants "transporting said web upwardly with 60°-90°... immediately after the coating" appears to contradict the following limitation of "inclining... said web from said 60°-90° inclination towards a horizontal direction gradually" when modified as the claim 44-46, as these claims do not allow for the change towards horizontal to be gradual, but appear to maintain the steep inclination, thus it is unclear how the "gradually" limitation has post be interpreted with respect to these claims. It is further noted that in light of applicants' specification, it is virtually impossible to reconcile these claims 44-46 with the requirements of independent claim 1, thus making their examination over prior art problematical.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-9, 11, 14-20 & 42-43 are rejected under 35 U.S.C. 103(a) as obvious over Strobush et al. (5,881,476), in view of Aoki (2002/0031608 A1).

Applicants have amended their claims such that the unclear "almost vertically" is no longer required, but a range of inclinations of 60°-90° with respect to the horizontal direction, which includes the possibility of vertical, but does not necessitate it, and is employed immediately after coating. The rest of applicant's configuration with respect to the initial inclination, being required to be inclined gradually thereafter, is unclear for reasons as stated above, but it is noted that the Strobush et al.'s teachings, as represented by figure 5, more clearly illustrate applicants independent claim 1, than any figure in applicants' application.

As previously set forth, Strobush et al. teach a process and apparatus (figures 5-12 & 23) for drying coatings on the substrate, where the coatings may be comprised of solid material dissolved, dispersed or emulsified in an evaporable liquid vehicle (e.g. solvent, inclusive organic solvents), where their process is particularly directed to minimizing the recognized problems caused by air turbulence,

such as defect formation like mottle, that are known to increase with increasing velocity of drying gas, via minimizing disturbance of gas adjacent to the coated side of the substrate. A drying enclosure (17) is employed with configurations therein designed to minimize mottle, where the first drying zone (18) is said to be of primary importance, and employs drying gas (e.g. heated air or inert gas) supplied from below the substrate, where it's coated surface is face up, with exhaust ports above & below the substrate, which collect evaporated solvent in plenums, and with independent control of temperature & gas velocity of individual drying gas inputs making possible the creation of subzones within the first drying zone (zones may or may not be partitioned) & control of the solvent level within the drying enclosure. It is further taught that the drying gas may be replaced by or augmented by use of other individually controllable heat sources, such as heated rollers, IR heaters, or heated plates. The drying process is taught to be controlled to prevent or minimize mottle formation by keeping the heat transfer rates below a threshold for causing mottle, where as a particular coating is dried, it will eventually reach a point at which it becomes "virtually mottle-proof", after which the heat transfer rates can be significantly increased.

The figures illustrating the apparatus, particularly figure 5 or 23, show the **coated substrate (web) being transported upward**, with in the scope of "almost vertically", immediately after coating, where rollers are illustrated to have an additionally steep upward incline, which is redirected to a path in a gently inclined arc that can be said to be "towards a horizontal direction gradually" (more so than applicants' disclosure), as the arc is tangent to horizontal, but the independent claim has now been amended to be 60°-90° inclination immediately after coating & the primary reference does not disclose a specific angle for their schematically illustrated incline (although prior art figure 1 illustrates the own vertical application of coating immediately inclined with entrance into a drying chamber). Strobush et al. also note that other path shapes may be employed. A variety of thin film coating techniques requiring drying as taught are mentioned, inclusive of forward or reverse roll coating, wire-wound coating, blade

coating, slot coating, slide coating, curtain coating, etc. (note slot coating is inclusive of extrusion die coating, while roll coating is inclusive of gravure & wire-wound coating ≡ wire-bar coating). In Strobush et al.'s example 1, 2 coating layers are applied via coating **die** (≡ extrusion coater) simultaneously, which both employ organic solvents of 2-butanone & methanol, in weight percentages greater than 50% (col. 18, line 45-col. 19, lines 23), where the wet thickness of the emulsion layer is 81.3 μm, while the wet thickness of the topcoat is 19.1 μm (col. 19, lines 24-53), noting the topcoat reads on applicants' claimed thickness. Various drying conditions were applied to determine their effects on mottling (col. 20). The examples on cols.18-21, were noted to only be exemplary, and employed different process speeds (0.38, 0.508, or 0.127 m/s) & distances between coating and entrance into the dryer (4 or 3 m), where example 4 teaches in col. 21, lines 43- 46, that the atmosphere is inert gas and the partial pressure of the solvent could be controlled using a "condenser loop".

It is noted that while Strobush et al. do not mention "an extrusion die coater" or a "wire bar coater" by name they specifically use die coaters & mention either equivalent names or general categories of these types of claimed coaters such that the taught useful techniques are considered inclusive of those claimed, or alternately would have been expected by one of ordinary skill in the art to be effectively treated by the drying process of Strobush et al., as they all may employ coating materials containing solvents as claimed, where the process of Strobush et al. is not dependent on the particular solution/solvent containing material application process.

In Strobush et al., particularly see the abstract; col. 1, lines 15-50 & 67-col. 2, lines 60; col. 6, lines 21-51+; col. 8, lines 64-col. 9, lines 59, especially 1-8, 13-15, 20-48; col. 10, lines 1-10, 29-39 & 52-col. 11, lines 27 & 38-48; col. 12, lines 14-67+; col. 13, lines 34-38; col. 14, lines 15-35; col. 15, lines 16-30+; col. 16, lines 14-25, 40-48 & 55-61)

The examiner continues to note, that when the apparatus of Strobush et al. is turned off, those the transport of the web must inherently be stopped, as would the input of drying gas also be stopped, hence the velocity thereof would have been be zero.

Strobush et al. reference does not discuss any particular angle of inclination to the horizontal for its illustrated initial transporting position after coating, however given the illustrations, such as provided by figure 5, this would have been suggested to one of ordinary skill to employ inclinations in a range around those approximating illustrated configurations, which would have been expected to be inclusive of claimed angles, where specific choice would have very depended on particular coating techniques, coating materials & their properties, such as viscosity, etc., especially considering the teachings of the expected usefulness of a variety of coating & drying apparatus to which the principles they set forth for drying while minimizing the creation of drying induced defects such as mottle, would apply (col. 8, lines 64-col. 9, lines 18).

While the exemplary distances between the start of the drying device & the coater provided in the specific examples (note illustrated guide roller at entrance of drying device) are longer than the claimed distances of "less than 2m" or "within 0.7m", it would have been obvious to an ordinary skill in the art that the particular examples of distance in the exemplary processes were not limiting to Strobush et al.'s process & apparatus structure, since they do not place limits thereon in their general discussion & employ varying short distances in the examples, thus one of ordinary skill in the art would have found it obvious to employ such distances as taught or shorter distances, dependent on local conditions, materials being processed, and keeping in mind the teachings of Strobush et al. with respect to the importance of the initial drying zone in preventing defect formation (mottling) in the coating, hence would have been expected to recognize that the sooner (i.e. shorter distances, dependent on speed) the coating is enclosed in the controlled drying environment, the sooner it is protected from environmental effects that could cause defects, thus suggesting to one of ordinary skill & competence, the obviousness of employing

distances as claimed. Also note that guide roller intervals within Strobush et al.'s dryer are not discuss, however are considered obvious variations on the illustrated configuration, as they would have been expected to be configured so as to adequately support the coated web substrate, thus would have depended on the dimensions & material of the web, so reasonably have been expected to be inclusive of less than 2 m, and further considering that the guide rollers may be heated rollers as were taught for possibly providing heat or augmenting the heated drying process, and thus would have been positioned to adequately provide the individually controlled subzones, which has noted in col. 14, lines 15-25, were contemplated to include those down to infinitesimally small size, thus suggestive of space as claimed for heated guide rollers.

Aoki (abstract; figures 3 & 5; [0002-4]; [0009-11]; [0027-28, esp.28]; [0031]; [0034-35] & [0038]) is also concerned with the effect of turbulence on a coating that is to be dried, and supports the above contention that the time before entering the drying zone & turbulence that may be present between coating and drying can be critical to the results of the drying, where they teach that the time after coating prior to entry into the drying zone should be no more than five seconds, preferably no more than three seconds, where the speed of the support is preferably between 0.5 and 1000 m/minute (i.e. maximum of 18 m/sec). It would've been obvious to one ordinary skill in the art to apply the teachings Aoki to those of Strobush et al., as they are directed to complementary considerations with respect to drying, plus, as illustrated in figures 3 & 5, are considered with respect to analogous coater & dryer configurations that employ gradual changes in inclination towards the horizontal within the drying device. It has noted that all the speeds employed in the examples of Strobush at all are within the speeds preferred by Aoki, where it is noted that for the preferred 3 second maximum for entering the dryer combination with Strobush et al.'s example 4, would give 3s(0.127 m/s) = 0.371 m, thus substantiating above arguments. It is further noted with respect to the configurations as illustrated in figures 3 & 5 of Aoki that the coating device (configured like an extrusion coater as in Aoki's figure 1, [0028]), applies the coating at a vertical

orientation of the web, which as it leaves the coater via action of the opposing guide roller immediately leaves vertical to be almost vertical such that it would go through angles as present in new claims 42 & 43, and proceed gradually upward at an inclination as presently claimed, which becomes more gradual & arced analogously to illustrations in the primary reference as it enters & within the dryer. Given the similarities of these configurations, plus the above observations concerning the wide applicability of different coating techniques to Strobush et al.'s drying process, it would've been obvious to employ coating configurations as illustrated by Aoki for the coating techniques of Strobush et al., thus also providing cumulative motivation, support for the above arguments & reasons for obviousness with respect to the claimed angles of inclination.

While Strobush et al. do not teach recovering condensed organic solvent, the suggestion in example 4 of employing "a condenser loop" to control the pressure of evaporated solvent is suggestive of the solvent being collected, and it would have been obvious to one of ordinary skill in the art that as one is already employing this means, which will collect the solvent, to also recover that solvent, especially for organic solvents for which there are environmental regulations concerning required recovery thereof (i.e. prohibiting release into the environment), which would provide ample motivation to recover such collected/condensed solvents. Note Strobush et al. teach subzones for drying, that may be partitioned, it would be have been expected by one of ordinary skill in the art as the condition to each subzone are individually controllable, to have the taught condensers in each zone.

While Strobush et al. does not discuss a particular range of weight percentages, such as applicants' claimed "at least 70% by mass", for the degree of drying that takes place in their apparatus, their discussion which requires the initial drying, such as in the first zone, to dry the coating sufficient to the evaporated enough solvent that the coating becomes "virtually mottle-proof", would have been expected by one of ordinary skill in the art to be inclusive of claimed percentages for a great many coatings, noting that what percentage of solvent needs to be removed to reach the state would have been

at least partially dependent on the properties of the individual coating materials, but would have been expected to be sufficient for the coating to have "set", thus reasonably inclusive of having a fairly small value of solvent remaining, such as less than 20% by weight. It is further noted that the particular percentage required in claim 16 is fairly meaningless with respect to significance to the process, as it requires that "...dries at least 70% by mass of said organic solvent contained in said coating solution", where since one has no idea what the original amount of solvent was, there is no way to determine how much 30% or less of an unknown amount constitutes, nor can this unknown amount have any clear meaning with respect to effects on the coating, etc., i.e. with respect to the potential for forming undesirable defects.

6. As previously noted, the patent to Su et al. (6,824,828 B2) is of interest for its comments in col. 1, lines 55-60 concerning stringent regulations regarding recovery of solvents. Other art having further coater & dryer configurations related to the claims include Cabelli (5,814,376: figures 29-31; col. 22, lines 61-col. 24, line 14 concerning gravure coating); Tsuda et al. (4,223,052); and Yamazaki et al. (5,536,535: figure 2).

7. Claims 10 & 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strobush et al. (476), in view of Aoki (2002/0031608 A1) as applied to claims 1-9, 11, 14-20 & 42-43 above, and further in view of Reznik (4,694,586).

As previously discussed, while Strobush et al. does not provide any details on the structure of the solvent condenser loop used to control the pressure of solvent in the dryer atmosphere, solvent condensers employed in dryers are old and well-known, as exemplified by Reznik, who teaches that his technique is useful for both maintaining the solvent vapor content of the atmosphere, plus condensing & recovering solvent dried from a coating, where the requirements for this procedure include the space in the dryer being a confined space of limited volume, and where cooling means, such as cooling coils that may be in a wall used for condensation, or cooled walls of the drying space, are employed to condense excess vapor

in the atmosphere, which runs down the wall due to gravity, to be recovered in a collection tray (abstract; figures, esp. 1-2 & 5-6; col. 1, lines 15-23 & 55-62; col. 2, lines 7-25, 47-52 & 58-66; col. 3, lines 1-8 & 57-65; col. 4, lines 13-18 & 25-45; col. 5, lines 14-25 & 39-53; col. 6, lines 20-30 & 56-66). Giving that the condensing apparatus employed in the dryer of Reznik may be used for the stated purpose desired in example 4 of Strobush et al., it would've been obvious to one of ordinary skill the art to apply the teachings of condensation/solvent vapor pressure control to the drying apparatus of Strobush et al., with the expectation of effectively controlling solvent vapor pressure as desired, since both drying apparatus are dealing with housings creating limited confined spaces. Furthermore, recovering evaporated solvent, via such a recovery operation would have been motivated for reasons as stated above & as given in Reznik. It is further noted that use of planar surfaces for the cooled condensation recovery surface, would have been consistent with the illustrated structure of Strobush et al. as combined with Reznik for the condensation/solvent recovery means, hence would have been found by one of ordinary skill in the art to be an obvious adaptation of Reznik's teachings to the Strobush et al. process, where such planar surfaces would have read on the claimed "plate-like member".

8. As previously noted, other art of interest for discussing solvent condensation processes with respect dryers included: Griffin (4378388); Kingsley, Jr. (4421794) & Tsujimoto (2004/0212892 A1), the last of which is not prior art. The British patent to Kores Holding Zug A.G. & US patent to Hebels, cited by applicant were noted to have further relevant teachings on condensation of solvent vapor from dryers.

The Nakamura et al. (2007/0285776 A1) is of interest as being to the same assignee (Fuji film) & concerning drying of solvent in coatings, including limitations concerning wind velocity, but as of the state lacks significant structural requirements related to drying present in instant claims.

Other art of interest include Suzuki et al. (6,136,380), which illustrates a coating web leaving an immersion tank 13, to pass vertically between components of drying means 18 surrounded by a casein

called main body 10, whose vertical position is due to positioning by guide rollers, which is relevant to the claims as amended by applicants, considering their uncertainty, but is slightly less relevant to the following three references, which have been applied due to changes made in the amendment of 12/11/2007.

9. Claims 1-4, 19-20 & 42-43 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Onuki et al. (JP 09-20 54355).

In Onuki et al., see the English abstract & figures, especially 1 & 4 were gravure printing is employed, such that the printed coating issues from the gravure rotary press at 30° or less & "immediately" is directed upwards to dryer part 5, at an illustrated angle, which is consistent with both the 60°-90 decreased & the more narrow ranges of 75°-89° or -88°, noting that the gradual change of inclination of the coated substrate web in drying part 5 can be considered to read on the language in applicants claims as presently presented. Note the coating surface is positioned upside in the dryer.

10. Claims 1-4, 19-20, 42-44 & 46 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Hashimoto et al. (JP 2003-133160 A).

In Hashimoto et al., see the English abstract & figure 1, noting gradual incline of coated surface in drying furnace 6, employing multiple rollers, then going horizontal upon exiting the furnace, such that claim configurations, angles & angular relationships are considered covered.

11. Claims 1-4, 19-20 & 42-45 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Morgan et al. (5,403,649).

In Morgan et al., see the figure, the abstract & column 7, lines 23-54, particularly noting that there are three rollers within the drying planum seven or at the entrance there to that create angles as claimed in position is consistent with those claimed, thus meet applicants' requirements, as the claims as written lack sufficient contacts to exclude such disclosures, especially considering the uncertainty in the beating of the gradually requirement.

12. Applicant's arguments filed 12/11/2007 and discussed above have been fully considered but they are not persuasive.

As noted above applicants claims as written are not consistent or properly supported by their specification & the examiner notes that while applicant's face their arguments on the configuration as illustrated in their figure 1, the claims as written do not necessitate this configuration, and while new claims 44-46 appear to have been intended to require this configuration, they are neither self consistent, nor consistent with independent claim 1, or properly at consistent with the original disclosure either, hence applicant's arguments are not convincing.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Marianne L. Padgett/
Primary Examiner, Art Unit 1792

MLP/dictation software

3/16/2008